CLAIMS

1. A process for producing single-wall and multiwall carbon nanotubes, comprising the stage of ablation by pulsed electron beams of a graphite target containing metallic catalysts.

2. The process according to claim 1, wherein a graphite target containing metallic catalysts, arranged inside a reactor, is subjected to pulsed electron beams, in a stream of preheated inert or hydrogen-containing oxygen-free gas, in order to evaporate explosively surface material of the target, said explosively evaporated material being conveyed by said stream of gas through the reactor and being optionally heated further.

3. The process according to claim 1, wherein the electrons are accelerated with an energy of less than 10 kV.

4. The process according to claim 1, wherein the material evaporated explosively from the target and subsequently conveyed by the gas stream through the reactor is further condensed on a metallic surface that is cooled to a temperature in the range between 500 °C and 0 °C.

5. The process according to claim 1, wherein said metallic catalysts are particles of iron, nickel, cobalt, yttrium and alloys thereof.

6. The process according to claim 1, wherein said gas stream is preheated to a temperature in the range between 700 and 1200 °C.

7. The process according to claim 1, wherein said material evaporated explosively from the target is further heated to a temperature in the range between 700 and 1200°.

8. The process according to claim 1, wherein said material evaporated explosively from the target is further heated by means of a tubular resistor heater arranged outside said reactor.

9. The process according to claim 1, wherein said material evaporated explosively from the target is further heated by means of a microwave pulse.

10. The process according to claim 9, wherein said microwave pulse

is in phase relationship with the pulse of the electrons of said pulsed electron beams.

11. The process according to claim 10, wherein said microwave pulse is released by means of an antenna that is arranged coaxially with respect to said reactor.

12. The process according to claim 10, wherein said microwave pulse is released by means of a waveguide arranged outside said reactor.

13. The process according to claim 1, wherein a pressure between 5 10^{-1} and 5 10^{+2} mbar is maintained inside said reactor.

14. The process according to claim 1, wherein said pulsed electron beams are generated in a spark generation system that is connected to said reactor, a pressure between 8 10^{-3} and 5 10^{-2} mbar being maintained inside said spark generation system.

15. The process according to claim 14, in which the adjustment of said pressure in said reactor and of said pressure in said spark generation system is provided by means of a differential pumping system.

16. The process according to claim 1, wherein said pulsed electron beams are characterized by a pulse repetition frequency between 10^{-1} and 10^{+2} Hz.